

METHOD FOR OPERATING A NAND-ARRAY MEMORY MODULE COMPOSED OF P-TYPE MEMORY CELLS

Abstract

A method for writing a memory module includes providing a plurality of memory cells, applying a first transmission line voltage to the first transmission line of the column of a memory cell, turning on a P-type channel of a memory cell between the memory cell to be written and the first transmission line of the column of the memory cell, turning off the P-type channel of at least one memory cell between the memory cell and the second transmission line of the column of the memory cell, applying a word line voltage to a word line connected to the memory cell, in order to inject hot electrons on a junction between the substrate and the first P-type doped region of the memory cell into a silicon nitride layer of the memory cell using band-to-band tunneling injection, and applying a substrate voltage to the substrates of the plurality of memory cells.